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EXAMINER	
MOORE, IAN N	
ART UNIT	**PAPER NUMBER**
2661	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	09/751,014	CHASKAR, HEMANT M.	
	Examiner	Art Unit	
	Ian N Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 09 February 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 18-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 18-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Argument

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found references.

Claim Objections

2. Claim 18 objected to because of the following informalities: Appropriate correction is required.

Claim 18 recites, "An improved General Packet Radio Service (GPRS) network **of the type** comprising..." in line 1-2. For clarity, it is suggested to revise the **bold** limitation.

FIRST SET OF REJECTION

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1,3-7, 9-11, 13-15, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3G TS (3G TS 23.107) in view of Davies (U.S. 6,483,805).

Regarding Claim 1, 3G TS discloses a General Packet Radio Service (GPRS) network (see FIG. 2, UMTS/GPRS network; see page 28, paragraph 9.1.2) comprising a plurality of GPRS Support Nodes (GSNs) (see FIG. 2, Core Network (CN) Edge and

gateway nodes, i.e., SGSN and GGSN nodes; see page 28, paragraph 9.1.2) including at least one Serving GPRS Support Node (SGSN) (see FIG. 2, CN Edge node, SGSN; see page 28, paragraph 9.1.2) in communication with at least one Gateway GPRS Support Node (GGSN) (see FIG. 2, CN gateway node, GGSN; see page 28, paragraph 9.1.2) via an Internet Protocol (IP)-based network (see FIG. 2, IP based network; see page 30, paragraph 9.4) comprising a plurality of intermediate nodes (see FIG. 2, UMTS/GPRS nodes) a method for communicating data across the IP-based network according to a plurality of traffic classes (see page 15, Table 1; page 20, Table 2 ; traffic classes and QoS attributes), the method comprising steps of:

defining (see FIG. 2, UMTS/GPRS Bearer Service (BS) Manager) a plurality of delay-differentiated paths (see page 24, paragraph 6.4.6,6.4.7; see page 30-31, paragraph 9.4; Differentiated services (Diffserv) flows/paths) within the IP-based network between each of the at least one SGSN and each of the at least one GGSN (see FIG. 2, paths between Core Network Nodes), wherein each of the plurality of traffic classes (see page 15, Table 1; page 20, Table 2 ; traffic classes) has at least one delay-differentiated path of the plurality of delay-differentiated paths corresponding thereto (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; note that BS Manager in CN edge defines CN BS QoS attributes from each packet of the received QoS attributes, and each packet maps/corresponds to each different QoS classes of traffic);

determining, by an ingress GSN of the plurality of GSNs (see FIG. 2, CN Edge node, SGSN; see page 28, paragraph 9.1.2), a traffic class (see page 20, Table 2; a traffic class) of

the plurality of traffic classes corresponding to the data (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; page 24, paragraph 6.4.6,6.4.7,6.5.1);

assigning, by the ingress GSN, to at least a portion of the data according to the traffic class (see FIG. 3, CN Edge node Mapper) to provide labeled/mapped data (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; note that each QoS attribute in the packet/traffic is mapped/assigned to form/provide CN QoS traffic class; mapping between Diffserv codepoints and UMTS/GPRS QoS classes); and

routing, by the ingress GSN to an egress GSN of the plurality of GSNs (see FIG. 2, CN Edge SGSN node to CN gateway GGSN node) the labeled/mapped data through a first delay-differentiated path of the plurality of delay-differentiated paths (see page 24, paragraph 6.4.6 and 6.4.7; Diffserv paths/routes) based on correspondence of the label/mapped to the first delay-differentiated path (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; 6.5,6.5.1; note that each mapped packet is routed through the first Diffserv path of plurality Diffserv paths according to the mapped classes (i.e. streaming, conversation, interactive, and etc., see Table 2, page 20).

3G TS does not explicitly disclose assigning a label to at least a portion of data, to provide labeled data. However, Davies teaches one servicing node (see FIG. 1, ingress DS Edge Router 10) in communication with at least one gateway node (see FIG. 1, egress DS Edge Router 10) via an Internet Protocol (IP)-based network (see col. 6, lines 67 to col. 7, lines 2; IP network) comprising a plurality of intermediated nodes (see FIG. 1, Routers 10 and 11), a method for communication data across the IP-based network according to a

plurality of traffic class (see col. 11, lines 55 to col. 12, lines 20; classes), the method comprising:

assigning, by the ingress node (see FIG.1, ingress Edge Router 10), a label (see col. 11, lines 55 to col. 12, lines 10; PHB label) to at least a portion of the data (see FIG. 2, TOS field for IP v.4 and see FIG. 5, TC field for IP v.6 of IP packet), to at least a portion of the data according to the traffic class (see col. 12, lines 10-20; traffic class) to provide labeled data (see col. 11, lines 55 to col. 12, lines 31; see col. 6, lines 55-67; note that each DSCP is mapped and marked/labeled by the appropriate PHB to form/provide PHB label/level packet); and

routing, by the ingress node (see FIG. 1, ingress Edge router 10) to an egress node of the plurality of nodes (see FIG. 1, egress Edge router 10), the labeled data through a first delay-differential path of the plurality of delay-differential paths based on correspondence of the label to the first delay-differential path (see col. 6, lines 56 to col. 7, lines 23; see col. 11, lines 55 to col. 12, lines 31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide assigning a label to provide the labeled data, as taught by Davies in the system of 3G TS, so that it would improve the packet-by-packet admission control by implementation of Differentiated services in a packet-switched network; see Davies col. 3, line 40-45, 49 to col. 5, lines 65.

Regarding Claim 3, 3G TS discloses wherein the ingress GSN comprises one of the at least one SGSN (see FIG. 2, CN Edge node, SGSN; see page 28, paragraph 9.1.2) and the

egress GSN comprises one of the at least one GGSN (see FIG. 2, CN gateway node, GGSN; see page 28, paragraph 9.1.2).

Regarding Claim 4, 3G TS discloses wherein the ingress GSN comprises one of the at least one GGSN (see FIG. 2, CN gateway node, GGSN; see page 28, paragraph 9.1.2) and the egress GSN comprises one of the at least one SGSN (see FIG. 2, CN Edge node, SGSN; see page 28, paragraph 9.1.2).

Regarding Claim 5, 3G TS discloses wherein the portion of the data comprises a packet (see page 10, paragraph 6.1.2; packet).

Regarding Claims 6, 3G TS discloses wherein transmitting, by the ingress GSN, the labeled data to one of the plurality of intermediate nodes (see FIG. 2, UMTS/GPRS nodes; see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; note that each QoS attribute in the packet/traffic is mapped/assigned to form/provide CN QoS traffic class; mapping between Diffserv codepoints and UMTS/GPRS QoS classes. Each labeled/mapped packet is send/transmitted by the SGSN to GGSN); handling, by the one of the plurality of intermediate nodes, the data based on the traffic class (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; 6.5,6.5.1; note that since the CN node maps the packet and routed through the first Diffserv path of plurality Diffserv paths according to the mapped classes (i.e. streaming, conversation, interactive, and etc., see Table 2, page 20), it is clear that each CN node must handle each packet accordingly). Davies also discloses wherein transmitting, by the ingress node, the labeled data to one of the plurality of intermediate nodes (see FIG. 1, Routers 10 and 11; see col. 6, lines 56 to col. 7, lines 23; see col. 11, lines 55 to col. 12, lines 31); handling, by the one of

the plurality of intermediate nodes, the data based on the traffic class (see col. 6, lines 56 to col. 7, lines 23; see col. 11, lines 55 to col. 12, lines 31).

Regarding Claim 7, the combined system of 3G TS and Davies discloses wherein each of the plurality of traffic classes has a unique correspondence to one of a plurality of per-hop behavior (PHB) groups, further comprising assigning, by the ingress GSN, to the labeled data based on the traffic class, wherein the step of handling further comprises the intermediated nodes handling the labeled data according to assigned to the labeled data as described above in claim 1 and 6. Davies further discloses assigning, by the ingress node (see FIG. 1, ingress Edge Router 10), a PHB group of the plurality of PHB groups (see col. 11, lines 55 to col. 12, lines 10; PHB groups/labels) to the labeled data based on the traffic class (see col. 5, lines 65 to col. 6, lines 10; see col. 3, lines 40 to col. 4, lines 10; note that each DSCP is mapped and marked/labeled by the appropriate PHB to form/provide PHB label/level packet according to QoS),

wherein the step of handling further comprises the intermediated nodes handling the labeled data according to the per-hop behavior group assigned to the labeled data (see col. 6, lines 56 to col. 7, lines 23; see col. 11, lines 55 to col. 12, lines 31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a PHB, as taught by Davies in the system of 3G TS for the same motivation as stated above in claim 1.

Regarding claim 9, Davies discloses assigning the PHB group to the labeled data based on any of a group consisting of: a source IP address, a destination IP address, a source port number, a destination port number, an IP protocol identification, a packet size, and flow

label (see FIG. 2, traffic flow/type/label of service, TOS in IP v.4 header; see col. 11, lines 55 to col. 12, lines 31; see col. 6, lines 55-67).

Regarding Claim 10, 3G TS discloses a General Packet Radio Service (GPRS) network (see FIG. 2, UMTS/GPRS network; see page 28, paragraph 9.1.2) comprising a plurality of GPRS Support Nodes (GSNs) (see FIG. 2, Core Network (CN) Edge and gateway nodes, i.e., SGSN and GGSN nodes; see page 28, paragraph 9.1.2), including at least one Serving GPRS Support Node (SGSN) (see FIG. 2, CN Edge node, SGSN; see page 28, paragraph 9.1.2) in communication with at least one Gateway GPRS Support Node (GGSN) (see FIG. 2, CN gateway node, GGSN; see page 28, paragraph 9.1.2) via an Internet Protocol (IP)-based network (see FIG. 2, IP based network; see page 30, paragraph 9.4) comprising a plurality of intermediate nodes (see FIG. 2, UMTS/GPRS nodes), a method for communicating data across the IP-based network according to a plurality of traffic classes (see page 15, Table 1; page 20, Table 2 ; traffic classes and QoS attributes), the method comprising steps of:

determining, by an ingress GSN of the plurality of GSNs (see FIG. 2, CN Edge node, SGSN; see page 28, paragraph 9.1.2), a traffic class (see page 20, Table 2; a traffic class) of the plurality of traffic classes corresponding to the data (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; page 24, paragraph 6.4.6,6.4.7,6.5.1);

assigning, by the ingress GSN, (see FIG. 3, CN Edge node Mapper) to the data based on the traffic class (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; note that each QoS attribute in the packet/traffic is mapped/assigned to

form/provide CN QoS traffic class; mapping between Diffserv codepoints and UMTS/GPRS QoS classes), and

transmitting, by the ingress GSN, a portion of the data to one of the plurality of intermediate nodes (see FIG. 2, CN Edge SGSN node to CN gateway GGSN node; note that a packet carries portion of the data; see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; 6.5,6.5.1; note that each mapped packet is routed through the first Diffserv path of plurality Diffserv paths according to the mapped classes (i.e. streaming, conversation, interactive, and etc., see Table 2, page 20); and

handling, by the one of the plurality of intermediate nodes (see FIG. 2, CN Edge SGSN node to CN gateway GGSN node), the portion of the data (note that a packet carries portion of the data; see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; 6.5,6.5.1; note that since the CN node maps the packet and routed through the first Diffserv path of plurality Diffserv paths according to the mapped classes (i.e. streaming, conversation, interactive, and etc., see Table 2, page 20), it is clear that each CN node must handle each packet accordingly).

3G TS does not explicitly disclose assigning a per-hop behavior (PHB) group of a plurality of groups. However, Davies teaches one servicing node (see FIG. 1, ingress DS Edge Router 10) in communication with at least one gateway node (see FIG. 1, egress DS Edge Router 10) via an Internet Protocol (IP)-based network (see col. 6, lines 67 to col. 7, lines 2; IP network) comprising a plurality of intermediated nodes (see FIG. 1, Routers 10 and 11), a method for communication data across the IP-based network according to a

plurality of traffic class (see col. 11, lines 55 to col. 12, lines 20; classes), the method comprising:

assigning, by the ingress node (see FIG. 1, ingress Edge Router 10), a per-hop behavior (PHB) group of a plurality of groups (see col. 11, lines 55 to col. 12, lines 10; PHB label of plurality of PHB labels) to at least a portion of the data (see FIG. 2, TOS field for IP v.4 and see FIG. 5, TC field for IP v.6 of IP packet), to at least a portion of the data according to the traffic class (see col. 12, lines 10-20; traffic class) to provide labeled data (see col. 11, lines 55 to col. 12, lines 31; see col. 6, lines 55-67; note that each DSCP is mapped and marked/labeled by the appropriate PHB to form/provide PHB label/level packet); and

routing, by the ingress node (see FIG. 1, ingress Edge router 10) to an egress node of the plurality of nodes (see FIG. 1, egress Edge router 10), the labeled data through a first delay-differential path of the plurality of delay-differential paths based on correspondence of the label to the first delay-differential path (see col. 6, lines 56 to col. 7, lines 23; see col. 11, lines 55 to col. 12, lines 31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide assigning a PHB, as taught by Davies in the system of 3G TS, so that it would improve the packet-by-packet admission control by implementation of Differentiated services in a packet-switched network; see Davies col. 3, line 40-45, 49 to col. 5, lines 65.

Regarding Claim 11, the claim, which has substantially disclose all the limitations of the respective claim 5. Therefore, it is subjected to the same rejection.

Regarding Claim 13, the claim, which has substantially disclose all the limitations of the respective claim 9. Therefore, it is subjected to the same rejection.

Regarding Claim 14, the claim, which has substantially disclose all the limitations of the respective claim 3. Therefore, it is subjected to the same rejection.

Regarding Claim 15, the claim, which has substantially disclose all the limitations of the respective claim 4. Therefore, it is subjected to the same rejection.

Regarding Claim 18, 3G TS discloses an improved General Packet Radio Service (GPRS) network (see FIG. 2, UMTS/GPRS network; see page 28, paragraph 9.1.2) comprising a plurality of GPRS Support Nodes (GSNs) (see FIG. 2, Core Network (CN) Edge and gateway nodes, i.e., SGSN and GGSN nodes; see page 28, paragraph 9.1.2) in communication with each other via an Internet Protocol (IP)-based network (see FIG. 2, IP based network; see page 30, paragraph 9.4) comprising a plurality of intermediate nodes (see FIG. 2, UMTS/GPRS nodes), wherein the improved GPRS network is capable of supporting a plurality of traffic classes (see page 15, Table 1; page 20, Table 2 ; traffic classes and QoS attributes), the improvement comprising:

at least one Serving GPRS Support Node (SGSN) (see FIG. 2, CN Edge node, SGSN; see page 28, paragraph 9.1.2) and at least one Gateway GPRS Support Node (GGSN) (see FIG. 2, CN gateway node, GGSN; see page 28, paragraph 9.1.2) having a plurality of delay-differentiated paths (see page 24, paragraph 6.4.6,6.4.7; see page 30-31, paragraph 9.4; Differentiated services (Diffserv) flows/paths) within the IP-based network between each of the at least one SGSN and each of the at least one GGSN (see FIG. 2, paths between Core Network Nodes); wherein each of the plurality of traffic classes (see page 15, Table 1; page

20, Table 2 ; traffic classes) has at least one delay-differentiated path of the plurality of delay-differentiated paths corresponding thereto see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; note that BS Manager in CN edge defines CN BS QoS attributes from each packet of the received QoS attributes, and each packet maps/corresponds to each different QoS classes of traffic);

wherein each of the at least on SGSN and each of the at least one GGSN further function to assign to data belonging to a traffic class of the plurality of traffic classes (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; note that each QoS attribute in the packet/traffic is mapped/assigned to form/provide CN QoS traffic class; mapping between Diffserv codepoints and UMTS/GPRS QoS classes); wherein the intermediate nodes handle the data accordingly (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; 6.5,6.5.1; note that since the CN node maps the packet and routed through the first Diffserv path of plurality Diffserv paths according to the mapped classes (i.e. streaming, conversation, interactive, and etc., see Table 2, page 20), it is clear that each CN node must handle each packet accordingly).

3G TS does not explicitly disclose assigning a per-hop behavior (PHB) group of a plurality of groups. However, Davies teaches one servicing node (see FIG. 1, ingress DS Edge Router 10) in communication with at least one gateway node (see FIG. 1, egress DS Edge Router 10) via an Internet Protocol (IP)-based network (see col. 6, lines 67 to col. 7, lines 2; IP network) comprising a plurality of intermediated nodes (see FIG. 1, Routers 10 and 11), a method for communication data across the IP-based network according to a

plurality of traffic class (see col. 11, lines 55 to col. 12, lines 20; classes), the method comprising:

assigning, by the ingress node (see FIG. 1, ingress Edge Router 10), a per-hop behavior (PHB) group of a plurality of groups (see col. 11, lines 55 to col. 12, lines 10; PHB label of plurality of PHB lables) to at least a portion of the data (see FIG. 2, TOS field for IP v.4 and see FIG. 5, TC field for IP v.6 of IP packet), to at least a portion of the data according to the traffic class (see col. 12, lines 10-20; traffic class) to provide labeled data (see col. 11, lines 55 to col. 12, lines 31; see col. 6, lines 55-67; note that each DSCP is mapped and marked/labeled by the appropriate PHB to form/provide PHB label/level packet); and

routing, by the ingress node (see FIG. 1, ingress Edge router 10) to an egress node of the plurality of nodes (see FIG. 1, egress Edge router 10), the labeled data through a first delay-differential path of the plurality of delay-differential paths based on correspondence of the label to the first delay-differential path, wherein the intermediate nodes handles the data according to the PHB group (see col. 6, lines 56 to col. 7, lines 23; see col. 11, lines 55 to col. 12, lines 31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide assigning a PHB, as taught by Davies in the system of 3G TS, so that it would improve the packet-by-packet admission control by implementation of Differentiated services in a packet-switched network; see Davies col. 3, line 40-45, 49 to col. 5, lines 65.

Regarding Claim 20, the claim, which has substantially disclose all the limitations of the respective claim 9. Therefore, it is subjected to the same rejection.

Regarding Claim 21, 3G TS discloses a General Packet Radio Service (GPRS) network (see FIG. 2, UMTS/GPRS network; see page 28, paragraph 9.1.2) comprising a plurality of GPRS Support Nodes (GSNs (see FIG. 2, Core Network (CN) Edge and gateway nodes, i.e., SGSN and GGSN nodes; see page 28, paragraph 9.1.2), a method for communicating data across an IP-based network (see FIG. 2, IP based network; see page 30, paragraph 9.4) according to a plurality of traffic classes (see page 15, Table 1; page 20, Table 2 ; traffic classes and QoS attributes), the method comprising the steps of:

determining, by an ingress GSN of the plurality of GSNs (see FIG. 2, CN Edge node, SGSN; see page 28, paragraph 9.1.2), a traffic class (see page 20, Table 2; a traffic class) of the plurality of traffic classes corresponding to the data (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; page 24, paragraph 6.4.6,6.4.7,6.5.1);

assigning, by the ingress GSN, to at least a portion of the data according to the traffic class (see FIG. 3, CN Edge node Mapper) to provide labeled/mapped data (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; note that each QoS attribute in the packet/traffic is mapped/assigned to form/provide CN QoS traffic class; mapping between Diffserv codepoints and UMTS/GPRS QoS classes); and

routing the labeled/mapped data (see FIG. 2, CN Edge SGSN node to CN gateway GGSN node), through one of a plurality of delay-differential paths (see page 24, paragraph 6.4.6 and 6.4.7; Diffservs paths/routes) based on a correspondence of the label to the one delay-differential path (see page 12-13; paragraph 6.2.2.1 and 6.2.2.2; see page 24, paragraph 6.4.6 and 6.4.7; 6.5,6.5.1; note that each mapped packet is routed through the first Diffserv

path of plurality Diffserv paths according to the mapped classes (i.e. streaming, conversation, interactive, and etc., see Table 2, page 20).

3G TS does not explicitly disclose assigning a label to at least a portion of data, to provide labeled data. However, Davies teaches one servicing node (see FIG. 1, ingress DS Edge Router 10) in communication with at least one gateway node (see FIG. 1, egress DS Edge Router 10) via an Internet Protocol (IP)-based network (see col. 6, lines 67 to col. 7, lines 2; IP network) comprising a plurality of intermediated nodes (see FIG. 1, Routers 10 and 11), a method for communication data across the IP-based network according to a plurality of traffic class (see col. 11, lines 55 to col. 12, lines 20; classes), the method comprising:

assigning, by the ingress node (see FIG. 1, ingress Edge Router 10), a label (see col. 11, lines 55 to col. 12, lines 10; PHB label) to at least a portion of the data (see FIG. 2, TOS field for IP v.4 and see FIG. 5, TC field for IP v.6 of IP packet), to at least a portion of the data according to the traffic class (see col. 12, lines 10-20; traffic class) to provide labeled data (see col. 11, lines 55 to col. 12, lines 31; see col. 6, lines 55-67; note that each DSCP is mapped and marked/labeled by the appropriate PHB to form/provide PHB label/level packet); and

routing, by the ingress node (see FIG. 1, ingress Edge router 10) to an egress node of the plurality of nodes (see FIG. 1, egress Edge router 10), the labeled data through a first delay-differential path of the plurality of delay-differential paths based on correspondence of the label to the first delay-differential path (see col. 6, lines 56 to col. 7, lines 23; see col. 11, lines 55 to col. 12, lines 31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide assigning a label to provide the labeled data, as taught by Davies in the system of 3G TS, so that it would improve the packet-by-packet admission control by implementation of Differentiated services in a packet-switched network; see Davies col. 3, line 40-45, 49 to col. 5, lines 65.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over 3G TS in view of Davies, as applied to claim 1 above, and further in view of Gibson (U.S. 6,680,943).

Regarding claim 2, the combined system of 3G TS and Davies discloses defining the plurality of delay-differentiated paths within the at least one SGSN and the at least one GGSN as described above in claim 1.

Neither 3G TS nor Davies explicitly disclose Multi-Protocol Label Switching (MPLS) implemented within the at least one SGSN/node and the at least one GGSN/node.

However, the above-mentioned claimed limitations are taught by Gibson'943. In particular, Gibson'943 teaches defining the plurality of delay-differentiated paths based on Multi-Protocol Label Switching (MPLS) (see FIG. 1, MPLS networks 15) implemented within the at least one SGSN/node (see FIG. 1, Abstract node AN 12) and the at least one GGSN/node (see FIG. 1, Abstract node AN 13); see col. 9, lines 1-25.

Note that 3G TS SGSNs and GGSNs are the border routers/nodes of the packet switching network. Gibson'943 teaches the abstract routers/nodes at the edge/border of the MPLS network. In view of this, having the combined system of 3G TS and Davies and then given the teaching of Gibson'943, it would have been obvious to one having ordinary skill in

the art at the time the invention was made to modify the combined system of 3G TS and Davies, by providing MPLS mechanism in the border/edges nodes of the packet switching network, as taught by Gibson'943. The motivation to combine is to obtain the advantages/benefits taught by Gibson'943 since Gibson'943 states at col. 9, line 20-25 that such modification would provide a new/updated/different set of diverse routes over the network, thereby spreading the load of the traffic over the network.

6. Claims 8, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3G TS in view of Davies, as applied to claims 1, 10 and 18 above, and further in view of RFC 2598 and RFC 2597.

Regarding Claim 8, 3G TS discloses wherein the plurality of traffic classes comprises conversational (i.e. highest QoS class), streaming (i.e. less QoS class), interactive (i.e. lesser QoS class) and background traffic classes (i.e. lowest QoS class; see page 20, Table 2; see page 13-15, paragraph 6.3 and 6.3.1 to 6.3.4). Davies discloses the class A corresponds to a First Forwarding PHB group, the class B corresponds to a second Forwarding PHB group, and the class C corresponds to a third Forwarding PHB group, and class A and C corresponds to a forth Forwarding PHB group (see col. 12, lines 9-31).

Neither 3G TS nor Davies explicitly disclose an Expedited Forwarding PHB group. However, RFC 2598 discloses wherein the conversational class corresponds to an Expedited Forwarding PHB group (page 2-11; Expedited Forwarding PHB group utilizes the highest QoS and most delay sensitive conversational class). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide EF PHB

group for the most delay sensitive conversational class, as taught by RFC 2598, in the combined system of 3G TS and Davies, so that it would provide a low loss, low latency, low jitter in the system; see RFC 2598, page 1, paragraph 1.

Neither 3G TS nor Davies explicitly disclose Assured Forwarding (AF1 to AF3) PHB groups. However, RFC 2597 discloses the streaming class (see page 6, paragraph 6; class 1 with low drop prec) corresponds to a First Assured Forwarding (AF1) PHB group (see page 6, paragraph 6, AF11, page 3-6, paragraph 2-7; page 8, appendix),

the interactive class (see page 6, paragraph 6; class 2 with medium drop prec) corresponds to a Second Assured Forwarding (AF2) PHB group (see page 6, paragraph 6, AF22, page 3-6, paragraph 2-7; page 8, appendix), and

the background class (see page 6, paragraph 6; class 3 with high drop prec) corresponds to a Third Assured Forwarding (AF3) PHB group (see page 6, paragraph 6, AF233, page 3-6, paragraph 2-7; page 8, appendix). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide AF PHB groups for the different traffic classes, as taught by RFC 2597, in the combined system of 3G TS, Davies and RFC 2598, so that it would provide assured forwarding of IP packets over the Internet; see RFC 2597, page 1, paragraph 1.

Regarding Claim 12, the claim, which has substantially disclose all the limitations of the respective claim 8. Therefore, it is subjected to the same rejection.

Regarding Claim 19, the claim, which has substantially disclose all the limitations of the respective claim 8. Therefore, it is subjected to the same rejection.

SECOND SET OF REJECTION

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1,3-7, 9-11, 13-15, 18, 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Widegren (U.S. 6,621,793).

Regarding Claim 1, Widegren discloses a General Packet Radio Service (GPRS) network (see FIG. 6, GPRS network) comprising a plurality of GPRS Support Nodes (GSNs) (see FIG. 6, SGSN and GGSN nodes; see FIG. 5, DiffServ (DS) routers R; or see FIG. 19), including at least one Serving GPRS Support Node (SGSN) (see FIG. 6, SGSN; see FIG. 5, 1st Edge DS Router R; or see FIG. 19, CN Edge node) in communication with at least one Gateway GPRS Support Node (GGSN) (see FIG. 6, GGSN; see FIG. 5, 2nd Edge DS Router R; or see FIG. 19, CN Gateway) via an Internet Protocol (IP)-based network (see FIG. 6, IP based network, or see FIG. 1, IP network 104; see col. 1, lines 45-63) comprising a plurality of intermediate nodes (see FIG. 5, DS core and Edge routers; see FIG. 19, CN Edge and gateway node) a method for communicating data across the IP-based network according to a plurality of traffic classes (see FIG. 10, traffic classes), the method comprising steps of:

defining a plurality of delay-differentiated paths (see FIG. 5, DiffServ paths) within the IP-based network between each of the at least one SGSN and each of the at least one GGSN (see FIG. 5, paths between two DS Edge Routers; see col. 3, lines 40 to col. 4, lines 10; or see FIG. 19, BS Manager in CN Edge Node, SGSN), wherein each of the plurality of traffic classes (see FIG. 10, traffic classes) has at least one delay-differentiated path of the plurality of delay-differentiated paths corresponding thereto (see col. 3, lines 65 to col. 4, lines 10; see col. 16, lines 59 to col. 17, lines 5; note that DS value in each packet maps/corresponds to each different class of traffic, and different type of traffics are queued and routed toward plurality of DS paths); also see method FIG. 15, steps 1 and 2; see col. 7, lines 65 to col. 8, lines 7;

determining, by an ingress GSN of the plurality of GSNs (see FIG. 5, DS Edge Router performs conditioning to the packet; or see FIG. 19, BS Manager in CN Edge Node, SGSN), a traffic class of the plurality of traffic classes corresponding to the data (see col. 3, lines 40-45; see col. 5, lines 49-55, col. 6, lines 15-20); also see method FIG. 15, steps 3 and 4; see col. 8, lines 7-22;

assigning, by the ingress GSN, a label (see col. 3, lines 44-53; PHB label/level packets) to at least a portion of the data according to the traffic class (see FIG. 5, DS edge Router; or see FIG. 9, CN Edge Mapper) to provide labeled data (see col. 5, lines 65 to col. 6, lines 10; see col. 3, lines 40 to col. 4, lines 10; note that each DSCP is mapped and marked/labeled by the appropriate PHB to form/provide PHB label/level packet); also see method FIG. 15, step 4-11; see col. 8, lines 16-50), and

routing, by the ingress GSN to an egress GSN of the plurality of GSNs (see FIG. 5, egress DS Edge Router; see FIG. 6, GGSN; or see FIG. 19, CN gateway, GGSN) the labeled data through a first delay-differentiated path of the plurality of delay-differentiated paths (see FIG. 5, DS path with appropriate PHB) based on correspondence of the label to the first delay-differentiated path (see col. 3, lines 22 to col. 4, lines 10; see col. 5, lines 29 to col. 6, lines 50; note that each PHD label packet is routed through the first DS path of plurality DS paths according to the PHD label/parameter (i.e. streaming, conversation, interactive, and etc., see FIG. 10, see col. 6, lines 35-40)); see FIG. 15, step 11, end-to-end routing activation; see col. 8, lines 46-67.

Regarding Claim 3, Widegren discloses wherein the ingress GSN comprises one of the at least one SGSN (see FIG. 6, SGSN; see FIG. 5, 1st Edge DS Router R; or see FIG. 19, CN Edge node) and the egress GSN comprises one of the at least one GGSN (see FIG. 6, GGSN; see FIG. 5, 2nd Edge DS Router R; or see FIG. 19, CN Gateway).

Regarding Claim 4, Widegren discloses wherein the ingress GSN comprises one of the at least one GGSN (see FIG. 6, GGSN; see FIG. 5, 2nd Edge DS Router R; or see FIG. 19, CN Gateway) and the egress GSN comprises one of the at least one SGSN (see FIG. 6, SGSN; see FIG. 5, 1st Edge DS Router R; or see FIG. 19, CN Edge node).

Regarding Claim 5, Widegren discloses wherein the portion of the data comprises a packet (see col. 3, lines 30-39; packet).

Regarding Claims 6, Widegren discloses wherein transmitting, by the ingress GSN, the labeled data to one of the plurality of intermediate nodes (see FIG. 5, egress DS core routers; or see FIG. 6, GGSN; or see FIG. 19, CN gateway, GGSN; see FIG. 15, step 11, end-

to-end routing activation; see col. 8, lines 46-67; note that, each PHB labeled/mapped packet is send/transmitted by the DS edge router/SGSN to one of the intermediate core routers/nodes);

handling, by the one of the plurality of intermediate nodes, the labeled data based on the traffic class (see col. 3, lines 22 to col. 4, lines 10; see col. 5, lines 29 to col. 6, lines 50; note that since the DS router or CN node is labeled/mapped the PHD label/parameter (i.e. streaming, conversation, interactive, and etc. see FIG. 10, see col. 6, lines 35-40), it is clear that each DS router or CN node must handle each packet accordingly); see FIG. 15, step 11, end-to-end routing activation; see col. 8, lines 46-67.

Regarding Claim 7, Widegren discloses wherein each of the plurality of traffic classes has a unique correspondence to one of a plurality of per-hop behavior (PHB) groups, further comprising a step of:

assigning, by the ingress GSN, a PHB group of the plurality of PHB groups (see FIG. 10-12; PHB groups; see col. 6, lines 35-55) to the labeled data based on the traffic class ((see col. 5, lines 65 to col. 6, lines 10; see col. 3, lines 40 to col. 4, lines 10; note that each DSCP is mapped and marked/labeled by the appropriate PHB to form/provide PHB label/level packet according to QoS),

wherein the step of handling further comprises the intermediated nodes handling the labeled data according to the per-hop behavior group assigned to the labeled data (see col. 3, lines 22 to col. 4, lines 10; see col. 5, lines 29 to col. 6, lines 50; note that since the DS router or CN node is labeled/mapped the PHD label/parameter (i.e. streaming, conversation,

interactive, and etc. see FIG. 10, see col. 6, lines 35-40), it is clear that each DS router or CN node must handle each packet accordingly).

Regarding claims 9, Widegren discloses assigning the PHB group to the labeled data based on any of a group consisting of: a source IP address, a destination IP address, a source port number, a destination port number, an IP protocol identification, a packet size, and flow label (see FIG. 14; see col. 3, lines 30-40; see col. 18, lines 60 to col. 19, lines 29; each DS labeled packet to PHB group according to any of a group consisting of a flow label or traffic class label of the IP header.)

Regarding Claim 10, Widegren discloses a General Packet Radio Service (GPRS) network (see FIG. 6, GPRS network) comprising a plurality of GPRS Support Nodes (GSNs) (see FIG. 6, SGSN and GGSN nodes; see FIG. 5, DiffServ (DS) routers R; or see FIG. 19), including at least one Serving GPRS Support Node (SGSN) (see FIG. 6, SGSN; see FIG. 5, 1st Edge DS Router R; or see FIG. 19, CN Edge node) in communication with at least one Gateway GPRS Support Node (GGSN) (see FIG. 6, GGSN; see FIG. 5, 2nd Edge DS Router R; or see FIG. 19, CN Gateway) via an Internet Protocol (IP)-based network (see FIG. 6, IP based network, or see FIG. 1, IP network 104; see col. 1, lines 45-63) comprising a plurality of intermediate nodes (see FIG. 5, DS core and Edge routers; see FIG. 19, CN Edge and gateway node), a method for communicating data across the IP-based network according to a plurality of traffic classes (see FIG. 10, traffic classes), the method comprising steps of:

determining, by an ingress GSN of the plurality of GSNs (see FIG. 5, DS Edge Router performs conditioning to the packet; or see FIG. 19, BS Manager in CN Edge Node, SGSN), a traffic class of the plurality of traffic classes corresponding to the data (see col. 3,

lines 40-45; see col. 5, lines 49-55, col. 6, lines 15-20); also see method FIG. 15, steps 3 and 4; see col. 8, lines 7-22;

assigning, by the ingress GSN, a per-hop behavior (PHB) group of a plurality of PHB groups (see col. 3, lines 44-53; a specific PHB label/level packets of PHB labels/levels) to the data based on the traffic class (see col. 5, lines 65 to col. 6, lines 10; see col. 3, lines 40 to col. 4, lines 10; note that each DSCP is mapped and marked/labeled by the appropriate PHB according to the QoS); also see method FIG. 15, step 4-11; see col. 8, lines 16-50), and

transmitting, by the ingress GSN, a portion of the data to one of the plurality of intermediate nodes (see FIG. 5, egress DS Edge Router or core router; see FIG. 6, GGSN; or see FIG. 19, CN gateway, GGSN; note that a packet carries portion of the data); see FIG. 15, step 11, end-to-end routing activation; see col. 8, lines 46-67; and

handling, by the one of the plurality of intermediate nodes, the portion of the data based on the PHB group (see col. 3, lines 22 to col. 4, lines 10; see col. 5, lines 29 to col. 6, lines 50; note that since the DS router or CN node is labeled/mapped the PHD label/parameter (i.e. streaming, conversation, interactive, and etc. see FIG. 10, see col. 6, lines 35-40), it is clear that each DS router or CN node must handle each packet accordingly); see FIG. 15, step 11, end-to-end routing activation; see col. 8, lines 46-67.

Regarding Claim 11, Widegren discloses wherein the portion of the data comprises a packet (see col. 3, lines 30-39; packet).

Regarding Claim 13, the claim, which has substantially disclose all the limitations of the respective claim 9. Therefore, it is subjected to the same rejection.

Regarding Claim 14, Widegren discloses wherein the ingress GSN comprises one of the at least one SGSN ((see FIG. 6, SGSN; see FIG. 5, 1st Edge DS Router R; or see FIG. 19, CN Edge node) and the egress GSN comprises one of the at least one GGSN (see FIG. 6, GGSN; see FIG. 5, 2nd Edge DS Router R; or see FIG. 19, CN Gateway).

Regarding Claim 15, Widegren discloses wherein the ingress GSN comprises one of the at least one GGSN (see FIG. 6, GGSN; see FIG. 5, 2nd Edge DS Router R; or see FIG. 19, CN Gateway) and the egress GSN comprises one of the at least one SGSN (see FIG. 6, SGSN; see FIG. 5, 1st Edge DS Router R; or see FIG. 19, CN Edge node).

Regarding Claim 18, Widegren discloses an improved General Packet Radio Service (GPRS) network (see FIG. 6, GPRS network) comprising a plurality of GPRS Support Nodes (GSNs) see FIG. 6, SGSN and GGSN nodes; see FIG. 5, DiffServ (DS) routers R; or see FIG. 19) in communication with each other via an Internet Protocol (IP)-based network (see FIG. 6, IP based network, or see FIG. 1, IP network 104; see col. 1, lines 45-63) comprising a plurality of intermediate nodes (see FIG. 5, DS core and Edge routers; see FIG. 19, CN Edge and gateway node), wherein the improved GPRS network is capable of supporting a plurality of traffic classes (see FIG. 10, traffic classes), the improvement comprising:

at least one Serving GPRS Support Node (SGSN) (see FIG. 5, DS Edge Router performs conditioning to the packet; or see FIG. 19, BS Manager in CN Edge Node, SGSN) and at least one Gateway GPRS Support Node (GGSN) (see FIG. 5, egress DS Edge Router; see FIG. 6, GGSN; or see FIG. 19, CN gateway, GGSN) having a plurality of delay-differentiated paths (see FIG. 5, DiffServ paths) within the IP-based network between each of the at least one SGSN and each of the at least one GGSN (see col. 3, lines 65 to col. 4, lines

10; see col. 16, lines 59 to col. 17, lines 5; note that DS value in each packet maps/corresponds to each different class of traffic, and different type of traffics are queued and routed toward plurality of DS paths); also see method FIG. 15, steps 1 and 2; see col. 7, lines 65 to col. 8, lines 7); wherein each of the plurality of traffic classes has at least one delay-differentiated path of the plurality of delay-differentiated paths corresponding thereto (see col. 3, lines 40-45; see col. 5, lines 49-55, col. 6, lines 15-20); also see method FIG. 15, steps 3 and 4; see col. 8, lines 7-22;

wherein each of the at least on SGSN and each of the at least one GGSN further function to assign a per-hop behavior group of a plurality of PHB groups (see col. 3, lines 44-53; a specific PHB label/level packets of PHB labels/levels) to data belonging to a traffic class of the plurality of traffic classes ((see col. 5, lines 65 to col. 6, lines 10; see col. 3, lines 40 to col. 4, lines 10; note that each DSCP is mapped and marked/labeled by the appropriate PHB according to the QoS); also see method FIG. 15, step 4-11; see col. 8, lines 16-50); wherein the intermediate nodes handle the data according to the PHB group (see col. 3, lines 22 to col. 4, lines 10; see col. 5, lines 29 to col. 6, lines 50; note that since the DS router or CN node is labeled/mapped the PHD label/parameter (i.e. streaming, conversation, interactive, and etc. see FIG. 10, see col. 6, lines 35-40), it is clear that each DS router or CN node must handle each packet accordingly).

Regarding Claim 20, the claim, which has substantially disclose all the limitations of the respective claim 9. Therefore, it is subjected to the same rejection.

Regarding Claim 21, Widegren discloses a General Packet Radio Service (GPRS) network (see FIG. 6, GPRS network) comprising a plurality of GPRS Support Nodes (GSNs)

(see FIG. 6, SGSN and GGSN nodes; see FIG. 5, DiffServ (DS) routers R; or see FIG. 19), a method for communicating data across an IP-based network (see FIG. 6, IP based network, or see FIG. 1, IP network 104; see col. 1, lines 45-63) according to a plurality of traffic classes (see FIG. 10, traffic classes), the method comprising the steps of:

determining, by an ingress GSN of the plurality of GSNs (see FIG. 5, DS Edge Router performs conditioning to the packet; or see FIG. 19, BS Manager in CN Edge Node, SGSN), a traffic class of the plurality of traffic classes corresponding to the data (see col. 3, lines 40-45; see col. 5, lines 49-55, col. 6, lines 15-20); also see method FIG. 15, steps 3 and 4; see col. 8, lines 7-22;

assigning, by the ingress GSN, a label (see col. 3, lines 44-53; PHB label/level packets) to at least a portion of the data according to the traffic class (see FIG. 5, DS edge Router; or see FIG. 9, CN Edge Mapper) to provide labeled data (see col. 5, lines 65 to col. 6, lines 10; see col. 3, lines 40 to col. 4, lines 10; note that each DSCP is mapped and marked/labeled by the appropriate PHB to form/provide PHB label/level packet); also see method FIG. 15, step 4-11; see col. 8, lines 16-50), and

routing the labeled data (see FIG. 5, routing between routers; or see FIG. 19, between nodes), through one of a plurality of delay-differential paths (see FIG. 5, DS path with appropriate PHB) based on a correspondence of the label to the one delay-differential path (see col. 3, lines 22 to col. 4, lines 10; see col. 5, lines 29 to col. 6, lines 50; note that each PHD label packet is routed through the first DS path of plurality DS paths according to the PHD label/parameter (i.e. streaming, conversation, interactive, and etc., see FIG. 10, see col. 6, lines 35-40)); see FIG. 15, step 11, end-to-end routing activation; see col. 8, lines 46-67.

9. Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Widegren in view of Gibson (U.S. 6,680,943).

Regarding claim 2, Widegren discloses defining the plurality of delay-differentiated paths within the at least one SGSN and the at least one GGSN as described above in claim 1.

Widegren does not explicitly disclose Multi-Protocol Label Switching (MPLS) implemented within the at least one SGSN/node and the at least one GGSN/node.

However, the above-mentioned claimed limitations are taught by Gibson'943. In particular, Gibson'943 teaches defining the plurality of delay-differentiated paths based on Multi-Protocol Label Switching (MPLS) (see FIG. 1, MPLS networks 15) implemented within the at least one SGSN/node (see FIG. 1, Abstract node AN 12) and the at least one GGSN/node (see FIG. 1, Abstract node AN 13); see col. 9, lines 1-25.

Note that Widegren's SGSNs and GGSNs are the border routers/nodes of the packet switching network. Gibson'943 teaches the abstract routers/nodes at the edge/border of the MPLS network. In view of this, having the system of Widegren and then given the teaching of Gibson'943, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Widegren, by providing MPLS mechanism in the border/edges nodes of the packet switching network, as taught by Gibson'943. The motivation to combine is to obtain the advantages/benefits taught by Gibson'943 since Gibson'943 states at col. 9, line 20-25 that such modification would provide a new/updated/different set of diverse routes over the network, thereby spreading the load of the traffic over the network.

10. Claims 8, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widegren in view of RFC 2598 and RFC 2597.

Regarding Claim 8, Widegren discloses wherein the plurality of traffic classes comprises conversational class corresponds to a First PHB group (see FIG. 10, Conversational class), streaming class corresponds to a second PHB group (see FIG. 10, Streaming class), interactive class corresponds to a third PHB group (see FIG. 10, Interactive active) and background traffic class corresponds to a fourth PHB group (see FIG. 10, Background class; (see col. 6, lines 35-55).

Neither 3G TS nor Davies explicitly disclose an Expedited Forwarding PHB group. However, RFC 2598 discloses wherein the conversational class corresponds to an Expedited Forwarding PHB group (page 2-11; Expedited Forwarding PHB group utilizes the highest QoS and most delay sensitive conversational class). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide EF PHB group for the most delay sensitive conversational class, as taught by RFC 2598, in the combined system of 3G TS and Davies, so that it would provide a low loss, low latency, low jitter in the system; see RFC 2598, page 1, paragraph 1.

Neither Widegren TS nor RFC 2598 explicitly disclose Assured Forwarding (AF1 to AF3) PHB groups. However, RFC 2597 discloses the streaming class (see page 6, paragraph 6; class 1 with low drop prec) corresponds to a First Assured Forwarding (AF1) PHB group (see page 6, paragraph 6, AF11, page 3-6, paragraph 2-7; page 8, appendix),

the interactive class (see page 6, paragraph 6; class 2 with medium drop prec) corresponds to a Second Assured Forwarding (AF2) PHB group (see page 6, paragraph 6, AF22, page 3-6, paragraph 2-7; page 8, appendix), and

the background class (see page 6, paragraph 6; class 3 with high drop prec) corresponds to a Third Assured Forwarding (AF3) PHB group (see page 6, paragraph 6, AF233, page 3-6, paragraph 2-7; page 8, appendix). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide AF PHB groups for the different traffic classes, as taught by RFC 2597, in the combined system of Widegren and RFC 2598, so that it would provide assured forwarding of IP packets over the Internet; see RFC 2597, page 1, paragraph 1.

Regarding Claim 12, the claim, which has substantially disclose all the limitations of the respective claim 8. Therefore, it is subjected to the same rejection.

Regarding Claim 19, the claim, which has substantially disclose all the limitations of the respective claim 8. Therefore, it is subjected to the same rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 571-272-3085. The examiner can normally be reached on M-F: 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JNM
2/23/05

Bob A Phunkulh

BOB PHUNKULH
PRIMARY EXAMINER